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| 10/664,848 | 09/22/2003 | John R. Condon | | 6549 |

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| EXAMINER |
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BERMAN, SUSAN W

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| ART UNIT | PAPER NUMBER |
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1711

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,848

Applicant(s)

CONDON, JOHN R.

Examiner

Susan W. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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Information Disclosure Statement

The information disclosure statement filed 07-06-2005 has been considered.

Response to Amendment

The amendment filed 07-06-2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the added material on pages 1, 2-3, 4, 7-8 and in the Abstract.

Applicant is required to cancel the new matter in the reply to this Office Action.

Applicant could file a Continuation-in-Part application to make these changes in the disclosure.

The status identifiers for claims 1-5 should be changed from "withdrawn" to "canceled". Claims 1-5 have not been withdrawn from prosecution but have been replaced by claims 6-10.

Claim 6 is a newly submitted independent claim. A fee for a new independent claim is required to be paid. The fee can be avoided in future amendments by amending an existing claim instead of canceling the claim and submitting a new independent claim.

Response to Argument

Claim Objections

Claims 7-8 are objected to because of the following informalities: the phrase "complex in claim 6" should read "complex of claim 6". Appropriate correction is required.

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Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to claim 7, the examiner has not found any mention of "spacer molecules" within the specification as originally filed. With respect to claim 8, the examiner has not found any mention of "bulk ceramic body" within the specification as originally filed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claim 6, it is not clear what is meant by "anodic free-radical polymerization". An anodic reaction pertains to oxidation while a free radical polymerization pertains to covalent polymerization of free radical containing materials. Claim 8 recites "ceramic core particle is instead the surface of a bulk ceramic body". The use of the word "instead" renders the claim indefinite, especially with respect to being dependent from claim 6 because claim 6 limits the molecular complex to one having a ceramic core particle. If applicant intends to define a different molecular complex wherein the initiator moieties are bonded to the surface of a bulk ceramic body, it should be so stated in an independent claim. If applicant intends to further limit the molecular complex set forth in claim 6 to a molecular complex wherein the

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surface of the ceramic core particle is covalently bonded to two or more molecules that are visible light sensitive initiators of anodic free-radical polymerization, it should be so stated. If applicant intends to claim some other variant of the molecular complex of claim 6, the kind of variant should be clearly defined. Applicant discloses on page 6, last line, to page 7, first line, reacting a photoinitiating compound having a reactive site with a complementary reactive site on the surface of the carrier particle of the molecule. Example 1 discloses fumed silica functionalized by treating with aminopropyl trimethoxysilane and then reacted with carboxyl functional camphorquinone to obtain particles having photoinitiating groups.

Claim 9 is indefinite because it recites "said" multi-functional photoinitiator but fails to set forth the kind of multi-functional photoinitiator being referred to by the term "said" and thus intended to be present in the mixture. Claim 9 fails to further limit claim 6 because claim 6 recites a "molecular complex" while claim 9 recites a "multifunctional photoinitiator".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply

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when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Yamato et al (6,673,850). Yamato et al disclose photoinitiators having more than one photoinitiating moiety and sensitive to wavelengths from 200 to 600 nm for photopolymerizing ethylenically unsaturated compounds (Abstract and column 19, lines 18-28).

Claim 9 is rejected under 35 U.S.C. 102(a) as being anticipated by WO 00/68218 (Yamato et al). Yamato et al disclose photoinitiators having more than one photoinitiating moiety and sensitive to wavelengths from 200 to 600 nm for photopolymerizing ethylenically unsaturated compounds (Abstract and column 19, lines 18-28).

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Chudzik et al (6,156,345). Chudzik et al disclose crosslinkable macromers including one or more polymer-pendent initiator groups for photopolymerizing ethylenically unsaturated monomers. Initiating groups disclosed include camphorquinone and other visible light activatable molecules (column 4, lines 4-5, column 6, lines 7-16). Macromeric backbones and polymeric backbones are taught (column 4, lines 62-65, and column 5, lines 43-49).

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by De Groot et al (6,747,090). De Groot et al disclose compositions comprising water-soluble polymers bearing vinyl groups and a polymeric water-soluble photoinitiator sensitive to wavelengths greater than about 305 nm. See column 5, line 50, to column 6, line 11, column 6, lines 46-62, and Example 1C.

Claim 9 is rejected under 35 U.S.C. 102(a) as being anticipated by WO 00/55214. WO '214 discloses a polymeric water-soluble photoinitiator sensitive to wavelengths greater than about 305 nm for

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photopolymerizing ethylenically unsaturated compounds. See page 3, lines 10-24, page 4, lines 13-16, and Examples 1 and 2.

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Ohwa et al (6,022,906). Ohwa et al disclose photoinitiators having multiple initiating moieties (see formula (II), (III) or (IV). UV or visible light can be used to photocrosslink materials using the disclosed photoinitiators.

Claims 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Swan et al (6,669,994). Swan et al teach coating a substrate with a coating agent that provides photoactive groups to the surface of the substrate for subsequent photoinitiation. The coating agents taught can be conjugated cyclic diketones, such as anthraquinone and camphorquinone derivatives (column 4, lines 50-67). See the Abstract, column 3, lines 9-53, column 4, lines 7-27 and lines 50-67. Swan et al teach that a wide variety of support surfaces, including silylated surfaces of ceramics, can be modified with the coating agents (column 16, lines 15-18 and 33-37). Thus, Swan et al teach a ceramic core covalently bonded to visible light initiating molecules and their use for initiating free radical polymerization.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee of \$.

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB
11/8/05



Susan W Berman
Primary Examiner
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